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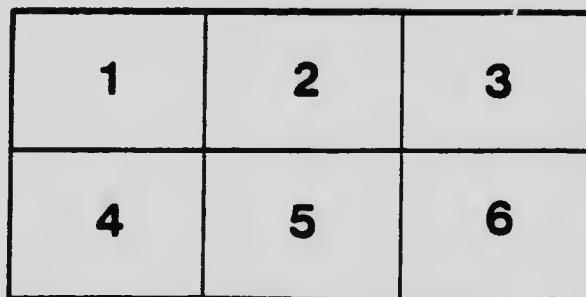
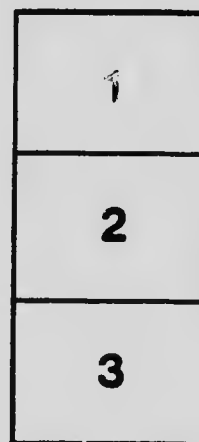
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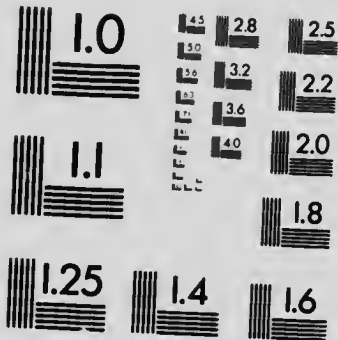
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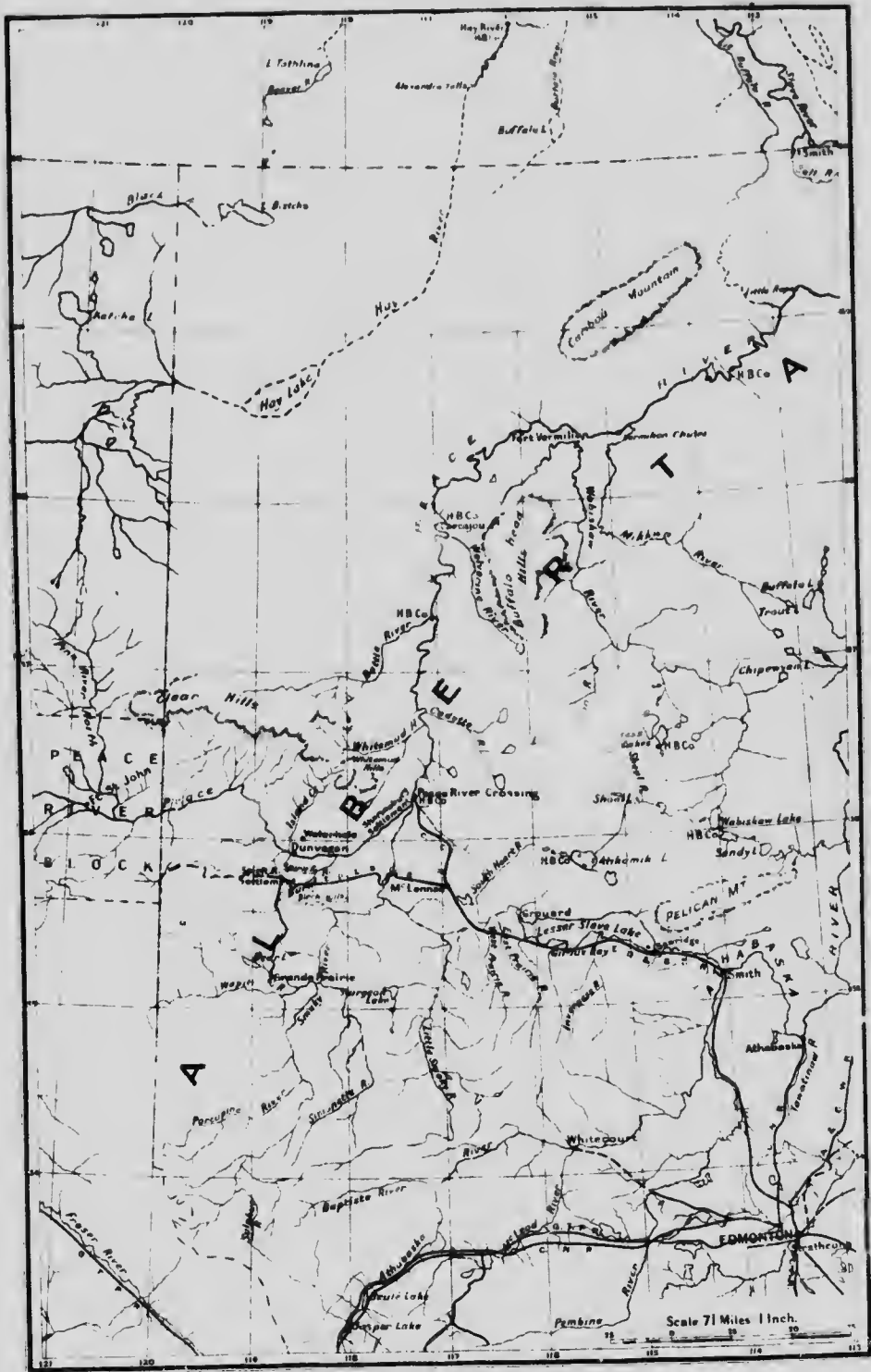
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THE PEACE RIVER COUNTRY

THE PEACE RIVER COUNTRY

A compilation of
information available as to the
resources and possibilities of the
basins of the Peace & Hay Rivers.

1916



DEPARTMENT OF THE INTERIOR
CANADA

HON. W. J. ROCHE, Minister; W. W. CORY, C.M.G., Deputy Minister
Prepared in the RAILWAY LANDS BRANCH under the direction of
F. C. C. LYNCH, Superintendent

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TABLE OF CONTENTS

Early History and Agriculture	Page 5-34
Present Agricultural Conditions	35-36
Waterways, Waterpower and Transportation	37-38
Timber Resources	39-40
Economic Minerals	42-43
Fish, Game and Fur-bearing Animals	44-47

LIST OF ILLUSTRATIONS

1 Peace River Map		Frontispiece
2 Junction of Peace and Smoky Rivers		Page 5
3 Vegetable Garden near Fort St. John		10
4 Ploughing at Grande Prairie		13
5 Field of Grain at Fort Vermilion		17
6 Vegetables Grown at Fort Vermilion		24
7 Hay River Settlement, Great Slave Lake		28
8 Mission Girls Making Moccasins at Hay River Settlement		29
9 General View of Peace River		31
10 Onion Patch on the Farm of James, near Peace River		35
11 Saw Mill on the Bank of the Peace		39
12 The 23rd Base Line between Townships 88 and 89, Range 14, West of the 6th Meridian ...		41
13 Back's Grayling		44
14 Trading with an Indian		46

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EARLY HISTORY AND AGRICULTURE

Peace river, which has lent its name to the country along its banks, whether in British Columbia or in northern Alberta, is formed by the junction of Finlay and Parsnip rivers, two transmontane streams, and is the largest and longest of the tributaries of the Mackenzie. It rises in and drains a large district west of Rocky mountains, and then continuing eastwards, intersects the axis of that range and drains the country lying along its eastern slopes, through four degrees of latitude. Its length, from the confluence of Finlay and Parsnip rivers, to the point at which it unites with the waters flowing from lake Athabaska to form Slave river, is seven hundred and fifty-seven miles, but measuring from Summit lake, the source of its principal branch, it is approximately nine hundred and five miles.



Junction of Peace and Smoky Rivers.

From the confluence of the Finlay and the Parsnip, the Peace flows in a general easterly direction for some three hundred miles to its junction with the Smoky, falling in this distance a little less than eight hundred feet. The country through which it flows may be considered as a plateau in which it has excavated.

A Rather Deep Valley.

A number of streams, Pine river from the south being one of the largest, discharge their waters into it. Back from the river the country is mainly

level or rolling, and is thinly wooded. Smoky river is the largest tributary of the Peace. Its principal branches rise on the eastern slope of Rocky mountains, and it drains a large extent of thinly wooded and prairie country. Below the mouth of the Smoky, the Peace turns and pursues a winding though general northerly course nearly to Fort Vermilion. It is bordered at first by steep sandstone cliffs, but its valley gradually becomes wider and shallower. Extensive plains comparatively level and clothed with grass or a sparse growth of poplars, border it on both sides. North of Fort Vermilion this character of country is said to extend to the valleys on Hay and Buffalo rivers. The country between Peace river and Great Slave lake, however, is very imperfectly known.

One of the first records we have of successful agriculture in Peace river country is in the famous diary of Daniel Williams Harmon of the Northwest Company's service, who spent several years there. He speaks favorably of the situation of Dunvegan (north latitude 56°, west longitude 119°), where he found himself located in October, 1808. He goes on to say in his diary:—"Our principal food will be the flesh of the buffalo, moose, red deer, and bear. We have a tolerably good kitchen garden, and we are in no fear that we shall want the means of a comfortable subsistence."

In an entry in his diary dated May 6, the following spring, Harmon states:—"We have planted our potatoes, and sowed most of our garden seeds." Under date June 2, the same year, we find the entry:—"The seeds which we sowed in the garden, have sprung up, and grow remarkably well. The present prospect is, that strawberries, red raspberries, shad-berries, cherries, etc., will be abundant this season."

July 21, Harmon writes:—"We have cut down our barley and I

Think it is the Finest

that I have ever seen in any country. The soil on the points of land along this river is excellent."

Under the date of September 1, the same year, Harmon noted the commencement of the annual migration of wild fowl southward, and on Friday, October 6, he wrote in his diary:—"As the weather begins to be cold, we have taken our vegetables out of the ground, which we find to have been very productive."

In his diary for the following year, Harmon records a summer frost on June 23, writing:—"The last night was so cold, that the tops of our potatoes were frozen." The frost in question does not seem to have damaged the crops, for on Wednesday the 3rd of the following October this observant diarist wrote:—"We have taken our potatoes out of the ground, and find that nine bushels, which we planted May 10 last, have produced a little more than one hundred and fifty bushels. The other vegetables in our garden have yielded an increase, much in the same proportion, which is sufficient proof that the soil of the points of land along the river is good. Indeed, I am of the

opinion, that wheat, rye, barley, oats, peas, etc., would grow well in the plains around us."

It is very evident that all of the officials of the fur trading companies who were on duty in Peace river country did not devote the same intelligent attention to agriculture that Harmon and his colleagues did.

When Charles Horetzky, C.E., was at Dunvegan in 1873 there was no bread used, and the only vegetables served at meals were some "very diminutive potatoes." Mr. Horetzky comments as follows on this subject:—"Owing to the fact that the Company's agents are liable to be suddenly removed from one post to another, those people are, not unnaturally, averse to the expenditure of time and labour necessary for farming experiments; hence the absence of farm produce at these posts. But the natural advantages of excellent soil of unlimited extent, and the proverbially early disappearance of the snow in spring, would lead one to believe that good crops of barley, potatoes, and fall wheat might be successfully raised in this part of the Northwest."

One of the strongest arguments advanced by Mr. Horetzky in his advocacy of Peace river pass route for the Canadian Pacific Railway was that a line built via this route would open up

A Vast Fertile Region

situated to the south of Peace river—"a region probably comprising an area equal in extent to Manitoba, well wooded, with abundance of fresh water, of excellent soil, and in all probability possessing unlimited quantities of good coal. The climate is most salubrious, and, by all accounts, as mild as, if not milder than, that of Red river. On the extensive plains bordering upon Peace river, both north and south of it, snow rarely exceeds two feet in depth, and never packs."

The travellers and traders who have been in Peace river country are as enthusiastic about its picturesque appearance as about its apparent fertility.

Mr. Horetzky reached Peace river a few miles above the mouth of the Smoky, September 30, 1873, and thus describes the scene:—"We feasted our eyes on the glorious landscape now mapped out before us. A strong westerly gale was blowing, but the air was so warm and balmy, that to recline on the beautiful grassy sward, full face to the blast, was positively delicious. For several miles, to the southwest, the noble river, flowing eight hundred feet below us, on its silent course to the Arctic ocean, could be distinctly traced as it meandered through its mighty valley. Several large and wooded islands dotted its surface here and there, causing eddies and whirlpools, which in their turn made long and faint streaks of foam, barely visible in the distance. From our position, and embracing an angle of fully one hundred and thirty degrees, or, in other words, from the northwest round to south, a boundless and nearly level expanse of country could be taken in at a glance, the only breaks being the great valleys of Peace and Smoky rivers, than which nothing

we had ever seen could be more beautiful, the former especially, in its magnitude and depth, surpassing all we had anticipated."

The pioneer missionaries attached to the Church of England and Roman Catholic missions appear to have done more towards demonstrating the agricultural possibilities of Peace river country, and the whole Mackenzie basin, than the fur traders.

As early as 1878 a mission farm was started, and it was as superintendent of the mission farms that the head of the Lawrence family, the originators of farming on an extensive scale and by scientific methods in Peace river country, was attracted there.

Besides the satisfactory pioneer attempts at tilling the soil of Peace river country, the raising of live stock was many years ago demonstrated to be successful. As early as 1823 there was an infant ranching industry there, Sir George Simpson's party having noted a small band of half a dozen horses when approaching Dunvegan.

Professor John Macoun was the first scientific explorer to draw attention to the agricultural possibilities of Peace river country, after making a thorough examination of the natural flora, the soil, climatic conditions, etc. Mr. Macoun had accompanied the first Canadian Pacific Railway survey expedition, and had subsequently been botanist to the geological survey party appointed to investigate this very country. There was much information as to the agricultural possibilities of the country in Professor Macoun's official reports, and he summarized his conclusions in his book "Manitoba and the Great Northwest," published in 1882. He defines a tract lying between the upper reaches of Athabaska river and the fifty-seventh parallel of latitude in Peace river basin, which he considers "may be classed as fertile," and estimates its area as about thirty-one thousand five hundred and fifty square miles. Speaking of this tract, he states:—"Its average elevation may be stated as little over two thousand feet, and this is maintained with considerable uniformity, for though the general surface slopes slightly from the north and south towards Peace river, the region as a whole may be considered as a plateau divided by the great gorge-like valley of the Peace.

"The northern banks of Peace river valley are also very generally open and grassy, and parts of the valley of the Smoky and other rivers have a similar character. The total area of

Prairie Land, West of Smoky River,

may be about three thousand square miles. The remainder of the surface is generally occupied by second-growth forest, occasionally dense, but more often open and composed of aspen, birch, and cottonwood, with a greater or less proportion of coniferous trees. Some patches of the original forest, however, remain, particularly in the river valleys, and are composed of much larger trees, chiefly coniferous, among which the black spruce is most abundant. Handsome groves of old and large cottonwoods are also to be found in some of

the valleys. Where the soil becomes locally sandy and poor, and more particularly in some of the more elevated parts of the ridges before described, a thick growth of scrub pine and black spruce, in which the individual trees are small, is found, and in swampy regions the tamarack is not wanting, but grows generally intermixed with the black spruce.

"Though the prairies are most immediately available from an agricultural point of view, the regions now covered with second growth and forest, where the soil itself is not inferior, will eventually be equally valuable."

Professor Macoun was examined before the Senate committee of 1888 and gave a considerable amount of information, all valuable at the time, and much of it still so, as to the character of Peace river country.

Starting from the Parsnip and through Rocky mountains, the good country for agriculture commences, according to Professor Macoun, at Rocky mountains portage at Hudson Hope (in British Columbia), or The Hope of Hudson, as Capt. Butler puts it. From this point down the country is suitable for agricultural purposes, the whole distance, not on the slopes of the river, but on the prairie above. The north bank of the river, that is the one facing south, has hardly any wood, but is covered with berries, and witness found the cactus growing there. The other side of the river, facing the north, was covered largely with spruce down to the river's edge, the whole upward slope. It was only the banks of the river that were wooded; above, all was prairie, with poplar and willow in clumps. It was of the same character as the North Saskatchewan, but with much taller grass.

Said Professor Macoun:—"While at Fort Vermilion, on Peace river, in latitude 58° 24', I was informed by old Mr. Shaw, who had charge of that post for fifteen years, that

Indian Corn Would Ripen

well every year there, and at Battle river corn ripened three years in succession, and that frost never injured anything on this part of the river. The whole country at Fort Vermilion is a plain, not elevated at its highest point more than a hundred feet over the river, but the greater part of it is less than fifty feet. The soil is wonderfully like that of the second prairie steppe, in the prairie region, as the surface is composed of black loam, mixed apparently with limestone gravel. From Fort Vermilion, Caribou mountains are visible about forty miles off. These may have the effect of keeping off the cold winds from Great Slave lake, and hence the country is permanently warm. Both days and nights have been warm down on this part of the river, whereas on the upper parts, where high banks are, the cold was even felt at night in August.

"The grain at Fort Vermilion was sown on May 8 and 20, and was cut on August 6. Wheat growing among the barley by the fences was almost ripe August 12, when I was there. At Rocky mountain portage (British Columbia), where Peace river issues from Rocky mountains, latitude 56° we found a first rate garden with vegetables far advanced, July 21; new potatoes,

onions and carrots were part of our bill of fare. That was in 1875. Five days later, at Fort St. John (B. C.) vegetation was even further advanced, and all kinds of garden stuff were in the greatest profusion. Nigger Dan's barley was coloring on July 26, and would be cut the first week in August. His potatoes were large, and enough for fourteen men were dug on August 2.

"I may mention that strawberries were fully ripe on July 6, at Hudson Hope (B. C.). At Dunvegan, barley was almost fit to cut August 4. Cabbages in the priest's garden were closing, and all his garden vegetables far advanced.

"At Battle river peas were getting ripe August 8. At Fort Vermilion potatoes were very large and many heads of barley contained sixty grains, others many more. I never saw such fine barley before. Barley was sown on May 8 and cut on August 6—that is at latitude $58^{\circ} 24'$. At Red *river (a small fort, fifty or sixty miles below Fort Vermilion), they have no ploughs, and the ground was broken up with spade or hoe. The garden stuff

Was Wonderfully Luxuriant,

peas, Windsor beans and potatoes being far advanced; cucumbers started and raised in the open air, a very large crop, and a number of them were ripe on August 14.

"At Mikkwa river fort a Frenchman named St. Cyr had a garden, and he told me he had a particular thing growing that he did not know anything about. I went out to look at it, and there was a splendid patch of cucumbers, many of them ripe. That was in August. I said: "These are cucumbers;

*Now called Mikkwa.



Vegetable Garden fifteen miles west of Fort St. John.

how did you start them?' He said: 'I got the seed from England and put it in the ground, and that is what has come from it.'

"The wild pea or vetch grows all through Peace river valley, but was particularly noticed on the plateau above Fort St. John (in British Columbia), in latitude 56°. Here it was actually measured by myself and was found to attain a height of eight feet, while the weeds, such as the purple fire weed of the east (*Epilobium angustifolium*) attained a height of seven feet. These are given in illustration of the wonderful luxuriance of the commoner plants on that high plateau. The vegetation throughout the whole Peace river valley is of the most luxuriant character, and it seems

More Like that of the Tropics,

than a country drawing near the Arctic Circle."

Professor Macoun explained that in Peace river country, the snow passes off so easily that as soon as it is off the ground and a few inches of the soil thawed, the ground is ready for seeding, because the soil is friable and the snow of little depth. The character of the month of September is almost identical with that of the very best Septembers in Ottawa—a smoky atmosphere with occasional white frosts in the mornings, but generally a calm atmosphere. In October the frosts get more severe towards the last of the month.

Professor Macoun furnished the committee with some data from notes kept by Daniel Williams, of Fort St. John, commonly known as "Nigger Dan." These notes showed that from 1872 to 1875 the date for planting potatoes varied from April 25 to May 10, and for sowing barley and oats from April 22 to May 7. After September 22, in 1874, Williams dug over one hundred bushels of potatoes.

William Ogilvie, D.L.S., in his report of 1884, wrote:—"Opposite Fort Vermilion, on the north of the river, there is an extensive tract of prairie and poplar bluff country, which extends from the Peace to the watershed between Peace and Mackenzie rivers, southwestward along the Peace for about forty miles or more, and northeastward along the river a few miles, until it merges into the country already described. This is said to be a first class country in every way, well wooded and watered, with a rich, deep, black loamy clay soil; and if the life of flowers and berries be any indication of freedom from frost, this district is favoured in this respect, as the berries ripen here when they are killed in the surrounding parts.

"It appears, therefore, that from Dunvegan, on the north side of Peace river, down the river to Peace point, and thence to Salt river on the Slave there is a tract of country about six hundred miles in length and forty miles wide, of which a large percentage is fit for immediate settlement, and a great deal more could be very easily cleared.

"At Dunvegan, notwithstanding the severity of frosts, the crops were

very good, both in quality and quantity. When I was there, the Roman Catholic missionaries

Had Threshed Their Grain,

samples of which I brought back. The yield was as follows:—Fifty pounds of wheat were sown on April 16 and reaped on August 20, and twenty-seven bushels threshed of good clean grain; fifteen pounds of Egyptian barley sown on April 18 and reaped August 20, and fifteen bushels threshed, weighing fully sixty pounds to the bushel. The Hudson's Bay Company and the Church of England mission had not threshed, and could not give their returns, but they were well satisfied with their crops of all kinds. The Reverend Mr. Brick, of the Church of England mission, was already using bread, when I was there, made from wheat of the present year's growth."

Mr. Ogilvie in his 1891 report wrote as follows:—"For a distance of six or seven miles back from Peace river valley there is much prairie and meadowland, with some woods and swamps scattered over it. The soil is an excellent black clay loam as rich as any I ever saw, and the growth of hay and grass bears testimony to this fact. The dip of the valley from this plain is very sharp and the banks very steep, falling about eight hundred feet in a mile.

"At Fort St. John the Hudson's Bay Company has a small patch on which they raise potatoes and garden stuff along with barley and oats. The grain always ripens and the vegetables are as good as one would wish to use. Mr. Gunn, the officer in charge here, has been in Peace river district since 1883, and in the interval he has wandered around the adjacent country a good deal.

"The Hudson's Bay Company has several bands of horses in the vicinity of Fort St. John, only a few of which have ever been broken. These animals live on the prairie on the north side of the river, winter and summer, and

Very Seldom are there Any Losses,

except by wolves, or when the Indians are starving they may quietly dispose of one or two and report them lost.

"At Dunvegan, the Company has grown wheat, barley, oats, potatoes, and garden stuff generally for many years with astounding success. When I was there in 1883-84, I saw grain and vegetables fully equal in quality and quantity to any I have ever seen anywhere, the garden vegetables being especially fine. Last year everything was harvested and stored when I got there, but what I saw of the produce was excellent. I saw two sunflowers which measured fourteen inches across the disc. With the corolla attached, these flowers would have been nearly two feet in diameter. The seeds of each weighed fourteen ounces and measured nearly a quart. A head of cabbage was shown from which I stripped off all the loose leaves leaving it fit for cooking and then measured and weighed it. It measured fifty-three and one-half inches in circumference, and weighed twenty-eight and one-half lbs.



Ploughing at Grande Prairie.

This was an exceptionally large head, of course, but the general run of both cabbage and cauliflower was large and would be considered so anywhere. Mr. Round, the officer in charge of the post, told me that two years ago he made a departure from the old fashioned method of growing these plants, and instead of developing them in hot beds he simply planted the seed once for all in drills in the garden, and when they arrived at the proper stage, pulled out the superfluous ones. He found this method just as satisfactory and much less troublesome. The other garden vegetables were just as large and good as one would wish to see them. Mr. Round informed me he planted fifteen bushels of potatoes last summer, and after using them freely for the sustenance of his family (five members) and the servants, in all eight or ten, from the time they were fit for use, until they were harvested, he harvested upwards of two hundred bushels. He sowed about four bushels of wheat, and though the dry season much affected the result he would have about sixty bushels. This grain is used in various ways, some of it being ground into flour by the aid of small hand mills. He sowed four bushels of oats, and though part of the crop was destroyed by a hail storm, one hundred bushels were threshed. In 1890 he planted twenty-five bushels of potatoes, and though they were freely used from the time they were fit for use until harvested, seven hundred and twelve bushels were harvested. Both grain and vegetables are also successfully raised here by the Anglican and Roman Catholic missions, the latter depending for much of their subsistence on the results of their agricultural labours.

"This post has been in existence for the greater part of a century, and more or less farming has always been done at it during that time."

Mr. Ogilvie embodied in his report a number of extracts from the Dunvegan post journal, which are interesting as conveying an idea of the

Climate and Growth of Vegetation.

Some of these extracts are worth quoting here:—

"1829. Ice began to move in the river April 12. Sowed barley April 17; planted potatoes April 30; cut barley August 10; cut wheat August 25; harvested potatoes September 24; first snow October 21; first drift ice October 24.

"1830. Ice broke up April 28; sowed thirty quarts of wheat May 3; sowed garden seeds May 4; planted potatoes May 5; cut wheat September 14; commenced digging potatoes September 27; first drift ice October 29; ice set fast November 25.

"1886. Ice started to break up April 13; sowed barley May 12; planted turnips May 13; planted potatoes May 17; began harvesting operations August 20; cut buckwheat September 2; harvested potatoes September 23; stored nine hundred and eighty-four bushels; slight snow October 12; first ice drifting November 10; ice set fast November 30.

"1887. Ice started April 27; sowed oats April 29; sowed other seed May 2; commenced planting potatoes May 5; sowed garden seeds May 9; sowed peas May 11; finished planting potatoes May 28; planted fifty bushels; severe frost June 7, injuring young vegetables, etc.; severe frost again on June 25, cutting down everything to the ground, potatoes and all; July 29 new potatoes for the first time; first snow fell on September 16; commenced taking up potatoes September 20; harvested six hundred and eighteen bushels; took up turnips and carrots September 5; first drift ice in river October 24, but it cleared out again and returned November 12; set fast November 29.

"1888. Ice moved May 1; began sowing barley May 9; began planting potatoes May 10; sowed oats and wheat May 15; sowed garden seeds May 16; sowed turnips May 28; slight frost August 1, injured garden stuff; cut barley September 5; cut oats September 7; started taking up potatoes September 27; finished October 3, five hundred and twenty-nine bushels; took up turnips October 5; first snow October 15; first ice in river October 27; ice set fast November 27."

Mr. Ogilvie continues, in his report:—

"I would now call particular attention to the mention of frost in June, 1887, and to the fact that it cut down vegetables to the ground. Alone there is nothing very wonderful about the statement, as it is just what we would expect frost to do; but in conjunction with using new potatoes for the first time on July 29, just one month after the frost, and the further fact that

Six Hundred and Eighteen Bushels Were Harvested

it is most astonishing. Mr. Round, the officer who made the entry, was a witness of the event, and he is a gentleman whose sanity I would as soon

doubt as his word. I questioned him about it and he assured me emphatically of its correctness. He can offer no explanation, if it is not that a fog generally settles on the river valley after a frost and shields plants from the direct rays of the sun a good part of the day; but even that does not account for this case, as he assures me the potatoes were cut down, black, to the ground.

"The Reverend J. G. Brick, Anglican missionary, who spent some time at Dunvegan, combining farming with mission work, in 1886 started what might be called a branch farm at Old Wives lake, about thirty-six miles from Dunvegan, on the cart trail, between the latter place and Smoky river crossing, on the plateau above the immediate valley of the river. Reference will be made to this later.

"In 1889, he established himself in the valley of the river on the north side, about five miles above the mouth of Smoky river. Here he has established a mission and a school for the education of the young, on which he bases all his hopes for the improvement of the natives. He keeps this school open during the winter months, and as an inducement to attend, he gives all the children who live at a distance their dinner

"This gentleman took in with him a large outfit of farm implements and stock. He has a small grist mill and threshing mill, with which he threshes and grinds his grain. By grinding his wheat twice it makes a fair article of flour, but his facilities for bolting it are not quite up to the times, consequently, his flour is not quite so white as our high grade flour, but it makes good bread nevertheless.

"He is well satisfied with his success agriculturally. He furnished me with the following information relative to his doings in 1891:—

"Began ploughing April 11; sowed first wheat April 15; ice broke up April 20; river cleared April 26; commenced harvesting August 20; cut wheat August 27; about nineteen acres under grain, total yield six hundred and ninety-eight bushels.

Wheat Two Hundred and Fifty Bushels on Six Acres;

oats two hundred bushels, barley two hundred and twenty-six bushels. After all the grain was removed he raked the field and got twenty-two bushels of grain from the rakings. He sowed two varieties of wheat, Ladoga, and wheat he got in Manitoba, which he thinks is Red Fife, but is not sure; both are beautiful specimens of grain. He has some two-rowed barley which he procured while in England in 1888, when he obtained one pound. The yield in 1891 was six hundred pounds of as fine, clean, bright and plump grain as could be seen elsewhere.

"His Ladoga wheat was sown April 21 and harvested August 24, but he allowed it to over-ripen and thinks he lost at least four or five bushels while harvesting. He sowed ninety pounds and threshed one thousand five hundred. He obtained a sample of black Norway oats from Webb & Company, England, which he sowed on five-eighths of an acre of ground, last year. When

harvesting it was all drawn off the field in one wagon load, and when threshed it turned out sixty-four bushels of first-class grain. Last year he tried Indian corn; it did not ripen, but yielded excellent green corn; cucumbers were grown successfully, but did not ripen. Yet I saw as good pumpkins fully developed both here and at Dunvegan as one would wish for.

"Mr. Brick has about forty head of cattle and several horses; last fall on my arrival here he had about forty pigs, but killed some during my stay, and only intended to winter about twenty-five. He employs a good deal of local labour, and pays for it with food to a very large extent; in fact, it is the only way it could be paid for in the country. The hay for wintering the cattle and horses is cut on the plateau about seven miles from the farm. He generally allows his cattle to run out until Christmas, the grass on the meadows being enough for them to feed on after the early snows have fallen. The horses not kept in for use are wintered out. The Hudson's Bay Company at Dunvegan has about one hundred and fifty wild horses, and the Roman Catholic mission and the Indians also have many which always winter out on the plains north of the Post, which affords them both food and shelter, as the country between Dunvegan and Smoky river crossing, on the north side, is particularly park-like prairie to a distance of twelve to twenty miles back from the river. The woods afford them shelter and on the prairies the rich grasses grow. There are also large areas

Where Excellent Hay Grows.

No other attention is, or has been, given to these animals than to send occasionally a man out to hunt them up and count them. This is not so difficult a task as it would seem, as they run in bands; each band consists of mares and a stallion, who will give fight to the death for his mares. Each band is known by the name of its stallion, and as each keeps pretty well in the one locality, it is not so difficult to keep track of them as it would appear. I saw several bands on my way from Dunvegan and all were very fat, notwithstanding that the cold winter weather had set in a month before, and the snows had been a foot deep for ten or twelve days. 'Chinook' winds occasionally visit this part of the country and carry the snow off; here also they blow from the southwest. The approach of one is known some little time before it arrives by the roar it makes. Many people in the country call them the 'high-winds,' they blow so strongly. They often visit Lesser Slave lake."

Mr. R. G. McConnell, of the Geological Survey, in the report of his visit to the country, wrote in 1888:—"Vegetables of various kinds are grown yearly without difficulty, at Fort Vermilion, Lesser Slave lake, Whitefish *lake and Trout †lake, while potatoes are grown by the Indians even on the summit of Birch mountain, at a height of two thousand three hundred feet above the sea. Wheat and other cereals have been fairly successful at Lesser Slave lake and at Fort Vermilion, the only places where they have been tried. The

*Now called Atikamik. †Now called Peerless.



Field of Grain at Fort Vermilion.

prairie country around Fort Vermilion equals in fertility the famous Edmonton district and appears to enjoy an equally good climate, its higher latitude being compensated for by its more western situation and by its lower elevation. This district is about one thousand feet above the sea. In the interior, narrow strips of aspen-covered, but excellent land, are usually found along the main rivers, and surrounding many of the lakes, and numerous areas, often

Equal in Size to Eastern Counties,

might be selected, which appear well adapted for cultivation, but the numerous swamps, muskegs and marshes which separate these areas detract greatly from their value. The western, and especially the northwestern, portion of this district contains the most promising agricultural lands."

Mr. McConnell, before the Senate committee of 1907, explained that his exploratory work in Peace river country had been mostly along streams. He had, however, been over quite a bit of the tableland. He had nearly always gone back from the river quite a bit, twenty or thirty and forty miles in places. From Lesser Slave lake he started on foot with a couple of men packing, and went through all the country between Lesser Slave lake and Big Knife lake, a distance of about one hundred and fifty miles. His mission was specially to look for minerals, but, of course, he was supposed to keep his eyes open for anything. As to the extent of land suitable for cultivation in Peace river country, Mr. McConnell said there are aspen ridges all through that country which may be good, but they are separated by muskegs everywhere, except on the table prairie. These muskegs occur with solid ground in between them, and in those places aspens grow, and where those poplars are found the land

is nearly always good. But the poplars do not grow to any size. The aspen is not on the prairie; it is on the wooded country, in between the muskegs. There are occasional patches of prairie tableland with only small areas of bottom land. The tableland decreases in height towards the north. Farther down the Vermilion the prairie begins again. At Fort Vermilion the country is not so much subject to frost as in the higher land. Wheat has been grown there a great number of years. In the valley of the river the low land on each side is fertile. There is no great quantity of it on either bank. There are just these flats. Taking the aggregate it is a large quantity because it is a tremendously long river. The valley is probably a mile wide on both sides of the river.

Grande Prairie, in upper Peace country, which is

About Seventy-five Miles Across,

is probably the largest area of open country, and there is a prairie following Peace river about twenty-five miles. That disappears going down Peace river, and the country is wooded and partly muskeg as far as Fort Vermilion. Then there is another small prairie area. Taking the upper stretches of the country, northward forty miles from the river, the country is partly muskeg. Travelling across it with horses, one would run into a muskeg every couple of miles, and there are ridges only a few feet higher than the muskegs, and they are nearly always covered with poplar, and those ridges seem to be fairly good agricultural land. But they are always separated by these muskeg lands. This muskeg is very deep. Mr. McConnell had had horses go down in it. Along all the streams there is a certain amount of good land. There are a great many streams in that country and in the aggregate the amount of water is large.

As to Grande Prairie, or north Peace river country, the soil is very good there. There is a subsoil. It is a good wheat country, and in June and July it is looked upon as the best wheat country in the world. He had noticed the pea-vine growing in that section, and so far as he could judge from going over it, the country is a good agricultural one, except for frosts. There happened to be some frosts both times he was there, but apart from that the country is certainly good. There is swamp grass growing about the margins of the small lakes. It was after the middle of the month of August that he experienced frost there. He did not know much about the growing of vegetables in Peace river country.

Mr. McConnell considered that at that date the value of Peace river country as a whole, as far as wheat growing was concerned, was entirely problematical. If one went there in June or July he would come to the conclusion that it is the finest country in the whole wide world, but he himself had been there twice in August and found a heavy frost on each occasion. Things changed very rapidly about the end of August. He did not know if there would be frost about the same time around Edmonton, but the two years he

happened to be in Peace river district there would be about fifteen degrees of frost at night. That was in the elevated cattle country, which is considerably higher than the surface of Peace river. There were no crops there at that time. The soil in that district is splendid. It is precisely the same as the country around Edmonton. It might be good for the growing of hay, or in fact, anything. There is no question that the soil is good, and in June and July it is a

Most Attractive Country.

He went down Loon *river, and found much of the country in there partly muskeg; in fact, the greater part of it is muskeg; but there are patches of country covered with aspen, which are probably good for agriculture. He went all the way down Loon river and Red river, which flows into Peace river, and another unnamed stream, and found it was a prairie country down there. There is a grist mill at Vermilion, and a large quantity of wheat is sent there. The wheat is all grown in that vicinity. That country is too good a country to be wasted. The valleys are protected from the wind, and the theory is that it is less liable to frost on account of the wind being kept away. There is a magnificent growth of grass on the plateau, and there is hay in the marshes. It is very much the same country as that around Edmonton. It is a good place for raising cattle, but they probably would have to feed them in the winter time, as they do at Edmonton. Sheep ought to do well. They appeared to have a fair rainfall. He thought that as far as the country is concerned it is very much the same as Edmonton. It is well watered.

Mr. McConnell concluded that a farmer might succeed there even if he could not grow wheat, if he could get a market. That was the only thing that would prevent him from succeeding, he thought.

Hon. William Christie, formerly Inspecting Chief Factor of the Hudson's Bay Company, in his examination before the committee, expressed himself sanguine about the agricultural possibilities of Peace river country, which he considered "is one of the finest countries that you would wish to see. Upper Peace river country is as fine a country as I ever saw." He did not think Peace river country subject to droughts at all, but the winter snow disappeared much more rapidly than it did in Manitoba. The vegetation in Peace river country is very luxuriant; the grass is more like that of Manitoba than that of Saskatchewan. He thought the wheat crop would be as certain in upper Peace river district as in the Saskatchewan district. On upper Peace river they are less subject to frost. He had always understood that wheat grew well at Dunvegan.

At Fort Vermilion there was a splendid country. He once rode with Governor Dallas sixty miles through a most magnificent country. The soil was a beautiful dark loam as they could see by the mole hills, and they were struck with the charming appearance of the country. There were more bluffs than were found on the Saskatchewan, and it was a beautiful country all the

*Now called Wabiskaw.

way up to Dunvegan. Where the country was open, the grass was higher than on the Saskatchewan. It was not very long—about the same as in Manitoba. As to the testing of the adaptability of the country for agriculture, he explained that a good deal had depended upon the character of the officers in charge of the various forts. In the journals of long ago he found that they used to raise splendid wheat crops at Dunvegan, and cattle. Another officer, without any taste for agriculture, going in there might find it very difficult to live. If he had no taste for gardening or agriculture, nothing would be raised. A great deal depended on the officer of the post whether he lived well or not. If he was active and energetic he would always live very well.

G. M. Dawson, M.D., L.L.D., at the time Assistant Director of the Geological Survey of Canada, expressed the opinion that "the truly wonderful luxuriance of the natural vegetation in Peace river valley prairies indicated not alone the fertility of the soil, but also the occurrence of a sufficient rainfall."

He went on to explain that the summer season of 1879 was an unusual one, characterized by excessively heavy rainfall, with cold raw weather in the early summer months. These conditions did not extend to the west of Rocky mountains, but appeared to have been felt over the entire area of the plains to Mikkwa river valley. As a result of this, the crops generally throughout the Northwest were later than usual, and the mean temperature of even the latter part of the summer appears to be rather abnormally low. Notwithstanding this, on Doctor Dawson's arrival at Dunvegan, on August 16, small patches of wheat and barley in the garden of the fort presented a remarkably fine appearance and were beginning to turn yellow. On his return to the fort on August 31, these were being harvested, their complete ripening having been delayed by overcast and chilly weather which prevailed between these dates. At the first-mentioned date potatoes were quite ripe, with the balls formed on the stalks, and the garden contained also fine cabbage, beets, carrots, onions, lettuce and turnips. Dwarf beans, cucumbers and squashes were also flourishing and, though these plants are particularly tender, showed no signs of frost. The two last-named, having been sown in the open ground, did not appear likely to perfect their fruit. A few stalks of Indian corn were also growing, though it is improbable that this cereal would ripen in this district. When this garden was again visited, on the last day of August, the beans, cucumbers, and squashes had been cut down by frost, but not completely killed. The potato tops were also slightly nipped.

Rev. Mr. Tessier, who had been at Dunvegan as a missionary for some years, had always been

Able to Ripen Small, Black Butter Beans,

but in some seasons not without difficulty, owing to frosts. He had also tried a few grains of oats, which he procured accidentally, and obtained a return of astonishing abundance. About the date just referred to, the potato plants

of Smoky river post (The Forks) were badly cut down by frost, the tubers being, however, quite ripe, fine and large.

Doctor Dawson pointed out that Mr. Horetzky had been told that the plains were often nearly bare up to the month of December, though the winter usually sets in with the month of November. Sir Alexander Mackenzie remarked the same absence of snow on the early winter months of 1792. It was entirely gone on April 5, 1793, and gnats and mosquitoes were troublesome on April 20. Horses almost invariably wintered out well without requiring to be fed. Hay should be provided for cattle, to ensure perfect safety, for a period of three or four months, though in some seasons it was necessary to feed the animals for a few weeks only. The Indians of "Cree Settlement" on Sturgeon lake wintered their horses without any difficulty round the borders of a neighbouring lake, the shores of which were partly open. From Hudson Hope, the horses were sent southward to Moberly lake to winter, and according to Mr. Selwyn did well there. Lesser Slave lake, with its wonderful natural meadows, has long been known as an excellent place for wintering stock, and was referred to as such by Sir. J. Richardson.

Professor John Macoun, of the Geological Survey, writes at Hudson Hope as he found it on the 22nd of July, 1875:—"I have been extremely surprised at the rankness of the vegetation around here, although there is very little rain at this season and there has been little all spring. Wild peas and vetches grow to an amazing height in the poplar woods, and form almost impenetrable thickets in many places. Vetches, roses, willow herb and grasses of the Geneva, Poa, Triticum, and Bromus fill the woods and cover the burnt ground, and surprise Canadians by their rankness and almost tropical luxuriance. Charlette, who is in charge of the Hudson's Bay Company's post here, has two small gardens, in which he has growing, potatoes, onions, turnips, beets, carrots, cabbage and various other vegetables. Yesterday we had new potatoes for dinner, of a very fair size, which were planted on April 28. Numbers of the onions were one and a half inches across, raised from seed imported from England and sown about the first of May. Growth is extremely rapid owing partly to the length of day and cloudless skies supplemented by heavy dews." Professor Macoun found wild strawberries in abundance here; saskatoons were in prime conditions and raspberries were quite common but only beginning to ripen (July 21). There is no doubt that formerly in some years summer frosts were harmful at Hudson Hope. In 1879, H. J. Cambie in the Canadian Pacific Railway report for 1880, states that the wheat was destroyed by frost that year. In the same report the Rev. D. M. Gordon, B.D., mentions that the little patch of wheat growing at Hudson Hope in 1879 was raised from a single grain, which Charlette found accidentally among some rice.

Professor A. R. C. Selwyn, Director of the Geological Survey, in September, 1875, writes (see Geological Survey Report 1875-76):—"We are now in the middle of September, the thermometer had only once reached 32°, and potato tops at Hudson Hope are still green. As a contrast to this it will

be seen in my report on the Saskatchewan country in 1873 that in the region about Edmonton and Victoria, two degrees further south, and about the same elevation, the thermometer fell on the 4th of September to 28°, on the 6th to 24°, on the 11th to 20° and again to 20° on the night of the 23rd."

From such comparison as could be made, according to Doctor Dawson, it would be premature to allow that the climate of Peace river was inferior to that of the region about Edmonton on the Saskatchewan. It was true, he admitted, that in both Saskatchewan and Peace river districts the season was none too long for the cultivation of wheat, but if the crop could be counted on as a sure one—and experience even then seemed to indicate that it might—the occurrence of early and late frosts might be

Regarded with Comparative Indifference

The season was at least equally short throughout the whole fertile belt from Peace river to Manitoba, though early and late frosts were not so common in the low valley of Red river.

The almost simultaneous advance of spring along the whole line of this fertile belt, Doctor Dawson pointed out, was indicated by the dates of the flowering of the various plants, a point referred to by him in some detail elsewhere. It was further unquestionable that the winter was less severe, and not subject to the same extremes in Peace river and upper Saskatchewan regions as in Manitoba.

Scientists, Doctor Dawson remarked, had already found reason to believe that the early and late frosts, and not the absence of a sufficient aggregate amount of heat, constituted the limiting condition of wheat culture in the Northwest, but that neither Saskatchewan nor Peace river countries lay upon the actual verge of the profitable cultivation of wheat appeared to be proved by the fact that oats succeeded on the Saskatchewan, and also—in so far as one or two seasons could be accepted as evidence—on Peace river; while it was well known that this cereal is less tolerant of summer frost than wheat.

Doctor Dawson's Striking Illustration.

To give some idea of the value of a tract of generally fertile country, such as that described, Doctor Dawson remarked:—"Let us assume, as above, that the area of actually arable land is twenty-three thousand five hundred square miles, or fifteen million one hundred and forty thousand acres. Let us suppose for simplicity of calculation, that the whole area were sown in wheat, the yield, at the rate of twenty bushels to the acre, would be three hundred million, eight hundred thousand bushels."

The Reverend J. Gough Brick, for many years in charge of the Church of England mission at Dunvegan on upper Peace river, submitted some interesting evidence in writing to the committee. He stated that on his mission farm he had ploughed on April 8, and sown wheat on April 12, and that wheat

was cut about August 20. Wheat was generally sown from April 12 to May 1, and harvested at the end of August. The barley was sown from May 10 to May 20, and harvested at the end of August. The time for sowing and reaping oats was the same as for wheat. Potatoes were planted about May 16 and dug in September. Turnips planted at same date were gathered October 10. The Hudson's Bay Company had done a little farming, in connection with other posts, at Dunvegan, Fort St. John, Hudson Hope and Fort Vermilion, for very many years. Witness supposed that at Dunvegan they had raised wheat, barley and potatoes for seventy-five to one hundred years, and seldom had the crops turned out a total failure. In 1884, he went up to the height of the prairie country, some thirty-six miles from Dunvegan, and broke up about three acres for an experiment. In 1885 the crop on the land, only once ploughed, was fairly good. In 1886 there was a magnificent crop of wheat, barley, peas, potatoes, turnips and all other vegetables. In 1887, he was sorry to say, the crop there was a total failure. A frost on July 26 killed out everything.

The ordinary prairie grasses, with wild vetches and pea-vine, were found in abundance, growing more or less all over the country. The soil was a black loam, a large percentage he considered fit for grain, the rest for pasturage. They had no insect pests in upper Peace river country. The Indians were raising a considerable quantity of potatoes. A few were raising a little barley and wheat.

Mr. Brick informed the committee that he considered the climate of Peace river country as

The Finest in the World.

The usual snowfall in Peace river is from eighteen to thirty feet. Ice begins to run in Peace river about November 5, but some seasons remain open until December 20. It generally breaks up about April 10 to 15. The prevailing wind is from the southwest, and during the winter the Chinook winds prevail in upper Peace river country. The three growing months are very dry until about the middle of July; then some seasons they get considerable rain. There were summer frosts some seasons; but still they were not so destructive in Peace river country as farther south. These frosts were purely local, and witness thought that were the country settled they would be less likely to occur. The early part of the summer is generally dry, while the weather in September and October is very pleasant indeed.

Some interesting information was communicated to the committee by Mr. Frank Oliver, then editor of the Edmonton Bulletin and member of the old Northwest Council. Mr. Oliver explained that most of his information was acquired from Mr. Murdock McLeod, formerly of the Hudson's Bay Company's service. Peace river country, according to this witness, was especially noted for its abundant supply of berries of excellent quality. Although berries of all kinds mentioned were plentiful in the upper Saskatchewan, Indians used formerly to travel to Peace river, some two hundred and fifty

miles, to avail themselves of the supply there. Successive years of experiment had demonstrated the practicability of the growth of wheat, barley, oats and potatoes, at Dunvegan, and Fort Vermilion, the latter in latitude $58\frac{1}{2}^{\circ}$.

There has been considerable exploitation of the agricultural possibilities of Peace river country since 1888, and we now have data which tend to show that the faith of the pioneer farmers of the country was not misplaced. Much interesting information, as to more recent agricultural enterprise in the country drained by the Peace, was obtained from witnesses examined before the select committee of the Senate of Canada in 1907.

Fred Lawrence, F.R.G.S., Justice of the Peace, etc., of Fort Vermilion, gave some detailed and interesting evidence. Mr. Lawrence explained that his father went out to Peace river from Montreal in 1879, in the employ of the Church of England missions, becoming at once interested in the problem of making the missions and Indian schools in Peace river, and the whole of the northern country, self-sustaining. The settlement of Fort Vermilion is in latitude 58.30° , almost as far north as the northern part of Labrador. The place in 1907 (it has since increased considerably) consisted of about five hundred people, white people and English-speaking half-breeds. The total production of wheat there in 1906 would be twenty-five thousand bushels, the average being

About Twenty-one Bushels to the Acre.

Of oats and barley about ten thousand bushels, mostly barley, was raised. The wheat was ground and used to make bread for the people out there. The first



Vegetables Grown at Fort Vermilion.

market was at Fort Vermilion and the surrounding points, and whatever surplus there was, was shipped down Peace river into Mackenzie river district.

Mr. Lawrence stated that in 1906 he had cut spring wheat, fully matured, in eighty-six days. The time of cutting was the end of July. Wheat grown at Fort Vermilion is harder than grain of the same variety grown in Ontario. He explained that the river bottom properly only consists of points or flats in the bottom of the bed of the river, which "bottom" is practically about two miles in width, whereas, what is properly called Peace river valley, is in reality a broad tract of country. When you once get on to the height of land, this so-called "valley" covers three hundred miles in width, and extends from Rocky mountains to lake Athabaska. Peace river makes great bends, and on alternate sides of the river you find wide flats, where there is probably the richest soil there is in that northern country, made up of alluvial deposits all black soil. There are places on the lower part of these points which get flooded, perhaps once in seven or eight years. Nearly all the points, however, are above the high water mark, and when these flats are cultivated the soil yields the heaviest of crops. On these flats cultivation of the soil was first undertaken in that part of the country, and it was supposed by many that they comprised the only part of Peace river country that was suitable for cultivation. People supposed that when they undertook the cultivation of grain on the height of land they would get into the muskeg and swamp that adjoined the river in many places, and grain could not be raised: but this has been proved to be a fallacy. The table land is sometimes called "bench land," and this bench land in some places is very wide. There are places in it, as at the south of Fort Vermilion, and to the north and west, where there is one hundred miles of this land on each side of the river.

This land is not all suitable for cultivation. It has its swamps and its muskegs and its

Low Patches of Land,

that are found in almost any country where there is a large growth of scrub timber, but the larger part of this land, as Mr. Lawrence had found by travelling over the country away from the river, is suitable for settlement.

Mr. Lawrence drew the attention of the committee to the fact that some years ago, Doctor Dawson, after going through Peace River country, reported that a large part of it was covered with muskeg and would be permanently unsuited for agriculture. In 1903 he took a trip of two hundred and fifty miles from Fort Vermilion to Lesser Slave lake through an unknown country. Later than that he travelled away from Peace river about fifty or sixty miles, and saw something that gave him an idea of these muskegs. The muskegs had covered some large patches of that country, and the moss was about three feet in thickness. There have been large tracts of this moss burnt out. Forest fires had been running through there, and Mr. Lawrence supposed that the fire burnt thousands of acres that had formerly been muskeg, as shown by these large patches of moss, sometimes a few feet across and sometimes

larger, which were left standing, where the muskeg had been. On this burnt area he saw grass from four to five feet in height. There were thousands of acres of it covered with the red-top grass, which is the standard grass of the west. The reason these muskegs had been there for so many years was that the moss formed a great sponge and retained the moisture. But when all that land is drained and the moss removed, it will certainly raise good crops of grass, and where grass can be grown, grain can be raised.

Mr. Lawrence stated that he would say that about one-tenth of the district to the north is covered with moss. To the south of Grande Prairie there is a large proportion covered with moss, and Doctor Dawson may have intended to refer particularly to that district. Mr. Lawrence produced photographs of the grain, raised on the soil that was formerly covered by timber—low land and timber. He explained that he had farmed at Fort Vermilion for over twenty years, and had

Never Had a Failure in Wheat

during that time, although he had as low as five and one-half bushels to the acre. There was one very dry season which reduced the average, but there was always a certain amount of grain raised there that was good for seed and grinding purposes. There has never been a complete failure from frost or any other cause. They have no rust on the wheat up there. He had raised as much as sixty-six bushels of wheat to the acre. That was the biggest yield, and accomplished without any fertilizer whatever. The heads of wheat at Fort Vermilion often would grow to the length of six inches, and at times he had counted sixty-five kernels in one head of wheat. Barley sown after the middle of May is usually ripe in the last week of July. The continuous daylight with about eighteen hours of sunlight accounts for the rapid growth of all vegetables in these parts.

During the month of July, Mr. Lawrence stated, they have at Fort Vermilion an occasional frost that sometimes cuts the potato vines down, but never puts them back seriously—just enough to show the effect of the frost on some of the top leaves. The potato vines, however, often show no sign of frost until they are ripe, and the potatoes obtain their full size and are matured. They had never had July frost severe enough to ruin the potato crops. These frosts are very slight. In 1906 he planted his garden during the week following May 24, and he planted tomatoes, cucumbers, peas and other vegetables. In the fall, during harvesting, his family had squash pie that was made from squash ripened in their own garden. The squash were raised just the same as the peas and other vegetables and took their chances, no hotbeds and no special care, and he also raised cucumbers and tomatoes. The tomatoes did not ripen, but before they had a chance to freeze they were taken up. He thought that with care such as is given to these things in Manitoba and other parts of the Northwest, planting these tender vegetables early in hotbeds, and giving them care, the same success could be had in raising tomatoes,

squash or other things of that kind as is had in Manitoba and other districts. At Peace River tomatoes were ripened in 1906 in the open garden. Other garden vegetables, such as cabbages, and so on, grow very well. He had raised cabbages at Fort Vermilion eighteen and one-half pounds in weight, and swede turnips are raised in the open field. Out of a three-acre patch

He Had Selected Turnips,

and a great many of them weighed from eighteen to twenty-five pounds. They were of the purple-top variety. They had no special attention or care, and they were good sound turnips.

Mr. W. F. Bredin, at that time member of the Alberta Legislative Assembly for the district, in his evidence before the committee stated that one spring when he left Fort St. John on the upper Peace, the grain there was up six or seven inches. He must have been at least a month going to Edmonton, and when he arrived the grain there was just in the same stage of growth as the grain had been when he left Fort St. John; so the season must be earlier at the latter place. They very often sowed seed at Fort St. John in March, and invariably no later than April. In 1906 they began cutting the wheat at Peace River on the last day of July, and the wheat was ready to cut five or six days earlier than that. As a matter of fact, Mr. Brick started to cut on the last day of July, and he told Mr. Bredin that the grain was ready to cut a week earlier. Mr. Brick cultivated there, that year, three hundred acres of land in wheat, oats and barley.

Stockmen west of Peace River would have to feed their cattle, taking one year with another, an average of seven weeks, and east of that probably more.

Mr. Elihu Stewart, at the time Superintendent of Forestry for the Dominion Government, exhibited before the committee samples of some of the grains that are grown at the end of Lesser Slave lake. One was a sample of hulled barley, grown for the use of the mission schools; another, wheat from Lesser Slave lake; a third another quality of wheat from the Roman Catholic mission at the end of Lesser Slave lake grown that year (1902). These specimens were principally from the very large Roman Catholic mission farm where mixed farming is successfully carried on. Mr. Stewart said he had noticed in discussions on Peace river that there was not enough distinction made between the valley of Peace river and the tableland above. There is a high level country, and all at once it drops down some six hundred feet to a valley. He thought the difference between the height of the banks and the water at Peace River is something like six hundred feet. In that valley there is no question at all about the wheat ripening. He produced some specimens of grain grown in the valley near Peace River, also some tobacco grown there. The width of Peace river valley is very narrow, not over two miles at the crossing. The soil is good, perhaps a little heavy, with the exception of a few miles which is light and covered with jackpine. The rest is good

cultural land. There would not be a great quantity of it in the valley of the river at that part. The altitude is pretty high, but down the river towards Fort Vermilion it lowers, and probably the elevation of the upland there would not be greater than the level of the water at Peace River. The grain-growing capabilities of that plateau all depend on the elevation. Peace river district is an immense country extending some six hundred miles from the mountains to the lake. Down at Fort Vermilion crossing they raise large quantities of wheat. Of course, at a very high altitude the same result cannot be expected, but wheat he saw on the plateau above the Peace river was uninjured on September 20. But there was frost that night. He did not know whether it was enough to kill the grain. However, if they had no frost up to September 20, there should be

No Trouble Ripening Grain There, •

because it ought to be fit for harvesting before the end of August. The wheat in question was sown by an Indian and put in very late. Wheat grown at Fort Vermilion took the first prize as the best wheat shown at the Centennial Exhibition at Philadelphia, in 1876.

With regard to the land north of Fort Vermilion, in the

Hay River Basin,

Sergt. R. W. Macleod, of the Royal Northwest Mounted Police, who made in the winter of 1909 a patrol across country from Fort Vermilion to the mouth of Hay river on Great Slave lake, states in his report (p. 178 Annual Report



Hay River Settlement, Great Slave Lake.

of the Royal Northwest Mounted Police for 1909) that from Fort Vermilion for about sixty miles the country is prairie with small poplar bluffs scattered over it, and the next twenty-five miles is mostly pine bush with here and there a small prairie, then on into Hay river at Horse track is prairie with poplar bluffs and willow scrub, a total distance of one hundred and ten miles from Fort Vermilion. In 1905 the government had a road cut out, corduroyed, and graded the entire distance suitable for a waggon road. Previous to that time an Indian pack trail was the only way to travel. The Hudson's Bay Company and Revillon Brothers each built a sales shop and residence at the end of the waggon road on the south bank of Hay river, and have been doing business there in the winter only, for fur. There are no white people in the country closer than Fort Vermilion. The country between Hay river and Fort Vermilion is nearly

All Apparently Suitable for Farming,

with a splendid supply of wood and water. Hay river is about one hundred yards wide at the Horse trace (local name) and is fed by numerous muskegs to the north of Dunvegan on Peace river, and the southeast slope of the divide between Peace and Liard rivers.

When Sergeant Macleod and his patrol were at Alexandra falls on January 29, they found that three small bands of Indian horses were wintering out on the portage which is a prairie with poplar bluffs.

Hay lake is about five hundred square miles in extent and is the source of the main river. There is a large number of small creeks and streams tributary to Hay river, all draining good fertile country, which is for the most



Mission Girls Making Moccasins at Hay River Settlement.

part undulating without any pronounced ranges of hills or prominent elevations. The shores of the lake are low and swampy and the waters shallow. The area of Hay river basin is approximately fifteen thousand square miles, of which probably ten thousand square miles are suitable for cultivation. Most of these agricultural lands lie in the vicinity of the upper sections of the river, especially in the neighbourhood of Hay lake. There the country is comparatively flat, with a large proportion of the land bearing a slight timber growth and excellently fitted, it is stated, for ranching purposes.

Wild grasses, vetches, pea-vine, etc., grow in great luxuriance everywhere, and the soil is a black sandy loam overlying a sandy clay.

The climate and general agricultural conditions are favourable. Cereals and root crops are all grown with great success at Hay river settlement, the most northerly point in the district. The potato crop especially is a great success and it is customary for the Hay river post to supply the surrounding posts with this useful article.

1908 Conditions and Settlement.

In his annual report (see annual report Royal Northwest Mounted Police, 1908), dated Athabaska, October 8, 1909, Inspector D. M. Howard, of "N" Division of the Royal Northwest Mounted Police gives much interesting information regarding conditions at that recent date in Peace river region. The principal settlements were stated to be as follows:—

"Lesser Slave lake (settlement) known as Grouard, so called after the Roman Catholic bishop of the diocese, a well-known pioneer of the country, is situated six miles from the west end of Lesser Slave lake and has a population of twenty-five whites, and one hundred and twenty-five half-breeds, who make their living by hunting, fishing and freighting in the winter time. Most of them have a few head of cattle and horses, and small gardens where they raise vegetables for their own use. The Roman Catholic mission has a school, hospital and convent. The Church of England also has a mission school hospital and convent. The Church of England also has a mission school for the Indian and half-breed children.

"Salt Prairie and Heart River (settlement) has a population of twenty whites and one hundred and seventy-five half-breeds.

"Prairie River (settlement) is considered one of the best settlements in the district, the land being very good. It has a population of eighty-five whites (Canadians, Americans and Swedes) and twenty-three half-breeds.

"Sturgeon Lake (settlement) has a population of nine whites and two hundred and ninety half-breeds and Indians.

"In Peace River there are six actual settlements:—Peace River, Shaftesbury, Silver Springs, Cold Springs, Bear Lake, and Little Prairie."

The inspector proceeds to give some particulars about these pioneer settlements:

Silver Springs (settlement) is situated about five miles from the farm of T. A. Brick, on a high bench at the head of a spring named by the settlers, Silver Springs.

Bear Lake (settlement) is used only as a winter camp, and for haying in the summer. The lake from which it is named is about twelve miles long by eight wide. It is very shallow and muddy, although the land about it is very good and will make a good grain country, but as yet no one has done anything in that line. There are no fish in this lake.



General View of Peace River, the Peace river in the background.

Little Prairie (settlement) is about twenty-two miles out from Peace River on the way to Lesser Slave lake. This prairie is about ten miles long and one wide, but can be extended in all directions by clearing the bush. The land is very good, and the little grain sown has done very well this year. Two white men and a number of half-breeds are the only settlers at present.

Peace River (settlement) is what is known as round the crossing of Peace river, extending about ten miles up on the north side of the river, taking in the Roman Catholic mission, known as Smoky River mission on account of its being opposite Smoky river where it joins the Peace; this part

is all surveyed with free grant lots to both whites and half-breeds who had settled there before the treaty known as No. 8 was made with the Indians.

Shaftesbury is the name given to the upper part of Peace River settlement, round the English Church mission, extending some sixteen miles up the river, and comprising the balance of Peace River settlement.

The Post Office for this District

is situated at Peace River, and serves for all these settlements.

Cold Springs (settlement) is located on high land about thirty miles from Peace River, near Old Wives Lake Indian reserve; several settlers have taken up land there this year, and grain of all kinds has done well.

Peace River settlement, including Shaftesbury, Bear Lake and Silver Springs settlements, has a population of about two hundred and forty; twenty-nine French-Canadians, thirty Canadians and English, forty Indians and one hundred and fifty half-breeds. Little Heart River has a population of forty half-breeds and two whites (Americans).

The settlement at Fort Vermilion, situated three hundred miles down the river from Peace River has in the last twenty years increased to a remarkable degree both in importance and prosperity. The neighbouring land is very rich.

As to industries and transportation, Inspector Howard stated in his report:—"Steam saw-mills are in operation at the following points in the district:—Lesser Slave Lake, Peace River, Prairie River, Fort Vermilion; one is also to be in operation at Saskatoon lake in the Grande Prairie country this winter. The mill at this point does a good business, as a number of new houses have gone up in the village this year, and a considerable quantity of lumber is used annually in the building of the scows for the river transport; few of these scows are brought back up the river; they are broken up down below, and the lumber used for building purposes, scows being built new at this point every year. Grist mills are also in operation at Lesser Slave lake, Peace River and Fort Vermilion. At Sawridge two lime kilns are in operation and a good quality of lime can be obtained at a reasonable price.

"The Northern Transportation Company has built a new steamer at this point (Athabaska) this summer for use on the run between here and Moose portage. This steamer is smaller than the 'Northland Sun' and of lighter draught and will enable the company to run much later than in former years. The river gets very low in the autumn before the freeze-up.

"Until the country has a railway affording the settlers entrance to the markets, the grain acreage will not increase beyond sufficient to supply the

settlers' own wants, and to meet local demands, but the advent of a railway will change all this."*

Agriculture in 1908.

Inspector Howard gave the following information as to agriculture in his district:—

"The general state of the district is satisfactory, and most of the settlers, having had good crops, seem well pleased with their prospects in this new country. In some parts of Peace river country a few suffered loss from hail, and want of rain in other parts has affected the crops of a few injuriously, but on the whole the crops were a very fair average. Nearly all the new settlers coming into the country this year have settled at Grande Prairie, in Peace river country, where the land is very good. Most of the settlers were from Eastern Canada and the United States, and in nearly all cases were supplied with a fair amount of capital, stock and farm implements. Nearly all of them have put in gardens, and have vegetables enough for their use in the winter, and from reports I have received from the detachments, in no cases should there be any shortage amongst the new settlers during the coming winter.

"Mixed farming is chiefly carried on in this district, oats and barley being the chief grain grown. There is practically no market for wheat at present owing to the want of railway communication. Potatoes and all other kinds of vegetables are successfully grown, most of the farmers having small vegetable gardens for their own consumption, but practically none are grown for market.

"In Peace River district, Red Fife wheat was sown last spring from seed supplied by the government. The wheat principally sown in this district in former years was Ladoga, an early ripening grain, but the Red Fife appears to have done just as well this year. The amount of grain raised this year in Peace River district is about:—Wheat, five thousand bushels; oats, four thousand bushels; barley, one thousand two hundred bushels; Threshing was not finished at the time this report was made, so the above is only an estimate.

"There are about three hundred head of horses of all kinds and three hundred and fifty head of cattle owned by settlers in Peace River settlement, practically

Every Farmer Owning a Few Head

of each. In Lesser Slave lake district there are approximately six hundred and one horses, seven hundred and fourteen cattle and one hundred and forty-five pigs. In addition to these there are the following registered stock:—three stallions, five bulls, thirteen cows, four boars and six sows.

*The railway has developed remarkably this country since Inspector Howard penned his report.

"The crops through Peace River and Lesser Slave lake sub-districts have been a fair average. The grazing lands about Lesser Slave lake, Grande Prairie, Peace River, Fort Vermilion and other sections are very good, and hay is very plentiful and a supply for the winter can easily be put up.

"The acreage under crop in Lesser Slave lake sub-district is about seven hundred and thirteen acres of oats, three hundred and one acres of barley, twenty-three acres of spring wheat, nineteen acres of fall wheat, twelve acres of fall rye. One acre of sugar beets and mangolds were grown this year as an experiment and turned out very successfully.

"The crop all round was good; only one farmer suffered any loss, about twelve acres of his barley being damaged by hail.

"Next year there will be a much increased acreage under crop, a lot of breaking having been done this summer and autumn."

A Pleasant Country to Live in.

Not only does the climate of the Peace country appear to be satisfactory from the viewpoint of the farmer, but it is also described by travellers as exceptionally pleasant to live in. Mr. Warburton Pike, in his book (see p. 19) refers enthusiastically to the beautiful autumn of the Peace country. He writes:—"We reached Fort Vermilion late in September, in the full glory of the autumn; the sharp morning frosts had coloured the poplar leaves with the brightest golden tints, and the blue haze of an Indian summer hung over prairie and wood. Away on Great Slave lake a half-breed had told me of the beauties of Fort Vermilion as a farming country, and had explained that all the good things of the world grew there freely, so that I was prepared for the sight of wheat and barley fields, which had this year produced a more abundant harvest than usual; potatoes and other vegetables were growing luxuriously; cattle and horses were fattening on the rich prairie grass, and it seemed that there was little to be gained by leaving such a fertile spot in the face of the winter that would soon be upon us."

Speaking of his trip up the upper Peace between the date mentioned and the end of November, Mr. Pike wrote:—"I do not remember to have ever seen in any other part of Canada such a fine autumn as we enjoyed between Vermilion and the Rockies. There was hardly a day's rain the whole time, and, although a sharp white frost usually made a cold camp, the days were bright and at times almost too hot for tracking."

That the climate of Peace river country is exceptionally healthy is declared by all the white people who have lived there, and their declaration appears to be born out by the fact that many of the inhabitants have attained a very old age.

PRESENT AGRICULTURAL CONDITIONS

In the neighbourhood of Peace River the farms which are already in occupation demonstrate beyond any doubt that the land is highly suitable for the production of all classes of cereal and root crops; many farmers in the vicinity of the "Waterhole," about thirty miles from Peace River, have from five hundred to eight hundred acres under cultivation and the land is very highly spoken of. The production of wheat ranges from forty to fifty-five bushels to the acre; oats fifty-five to sixty-five and barley seventy to eighty; corn, tomatoes, squash and citron ripen in the open air very satisfactorily; truck garden produce is very successfully grown in and around Peace River. A large extent of undulating country lying north and west of Peace River is suitable for ranching or stock-raising purposes; there is in all probability five thousand square miles of this class of country. South of the Buffalo Head hills the land is not of such a good quality, being broken up by swamp and sandy ridges, but in the proximity of Carcajou Point, the land is again very fertile and should attract many



Onion Patch on the Farm of James, near Peace River.

settlers. Probably the best proof of the fertility of the soil and the ease with which the land can be brought into a productive state is visible at the Fort Vermilion settlement, which is nearly three hundred miles from Peace River; the farms exhibit results of a character which is a striking demonstration of the fertility of the soil in conjunction with careful methods of husbandry. The Government experimental farm at this point is a sight that would astonish many of the farmers of the east; wheat of the Red Fife variety was sown here on April 15, 1915, and harvested August 17, having been absolutely untouched by frost; the production per acre amounted to forty-two bushels, height of straw three feet ten inches and length of head four inches. Exceedingly satisfactory results were obtained with the garden and root crops and with the cultivation of alfalfa. Land of such a character is not limited to the experimental farm, for there is a large area of land of this description, extending for over eight hundred square miles, in the same locality, and still awaiting settlement.

A great expanse of excellent farm land is located between the Birch and Mikkwa rivers. This land is primarily best suited for stock raising purposes. Large tracts of natural hay meadows, interspersed with rolling bush country, make this section an ideal one for the stock breeder; ample supplies of water exist everywhere and a luxuriant growth of natural grasses, including the blue joint, fescue, and meadow grass, together with the wild-pea vine, furnish cattle feed in great abundance.



WATERWAYS, WATER-POWER AND TRANSPORTATION

From Hudson Hope which is situated at the lower end of the Rocky Mountains' cañon, there is no obstruction whatever to steam navigation on the Peace river till the Vermilion Chutes are reached some five hundred miles lower down. At Hudson Hope the river is about seven hundred and eight feet wide and the rate of the current three to three and a half miles per hour. During the spring flood the river rises sixteen feet but the banks are high and the water can do practically no damage. At the Vermilion Chutes, the river plunges over a limestone ledge about ten feet in height, and then continues its course, placid and deep; a slight riffle occurs at a point locally known as the Rapide de Boyer or Little Rapid, but it is not a hindrance to navigation. Flat-bottomed steamers of five hundred tons, drawing from three to four feet of water, experience no difficulty in traversing this part of the river.

Mr. J. K. Cornwall in his evidence before the Senate Committee of 1907 suggested the construction of tramways to surmount the obstacle to navigation at the Vermilion Chutes.

Recently work has been commenced at this place upon tramways, which, when completed, will greatly facilitate the movement of cargoes on these northern waterways.

There are excellent opportunities at the Chutes for the development of water power.

Except for trans-shipment at the Chutes on Peace river and at Slave rapids on Slave river, there is a total navigable distance of two thousand two hundred miles from Hudson Hope to the mouth of the Mackenzie.

The Peace river has an average depth in the main channel of from twenty to thirty feet and an average width of from half to three-quarters of a mile; at certain times in the year and especially in the months of June and July, the river brings down enormous quantities of silt and mud in suspension, necessitating the filtration of the water on these occasions to render it fit for drinking purposes. The current is fairly swift at all times, averaging two and a half miles per hour.

Smoky river is navigable for small craft, such as scows and gasoline motor boats, but the remaining tributaries of the Peace river can only be traversed by means of a canoe.

Hay river cannot be regarded as a navigable waterway, although it is quite possible to transport goods down the river to a point about one hundred miles from its outlet into Great Slave lake. Here it plunges over a limestone ledge three hundred and eight-four feet wide and one hundred and six feet high, forming Alexandra Falls. It is a grand and awe-inspiring sight and possibly the highest falls of its volume in Northern Canada. The river was at medium height when the measurement was made.

After leaving Alexandra Falls the river follows for a distance of two miles a steep cañon, three hundred feet high, when it plunges over a ledge forty-six feet in height. The river then proceeds down the cañon for a distance of seven miles forming rapids at every turn, after which it resumes its normal course with a moderately sluggish current and an occasional rapid for a distance of sixty miles flowing between banks of limestone which gradually change to white clay. At a distance of about fifteen miles from Great Slave lake the banks gradually dwindle and become low and marshy.

Railway Transportation.

Access to the Peace River country has now been rendered very easy by the recent railway developments. The Edmonton, Dunvegan and British Columbia Railway has completed tracklaying to Spirit River and trains are now being operated. Tracklaying on the branch line from Spirit River to Grande Prairie is finished. This branch is sixty miles long.

The Central Canada Railway is operating trains from McLennan, on the Edmonton, Dunvegan and British Columbia Railway to Peace River.



TIMBER RESOURCES.

Doctor G. M. Dawson, before the Senate Committee of 1888, after describing the prairie country, showed that the remainder of the surface was generally occupied by second-growth forest, occasionally dense, but more often composed of aspen, birch and cottonwood, with a greater or less proportion of coniferous trees. Some patches of the original forest, he said, remained, however, particularly in the river valleys, and were composed of much larger trees, chiefly coniferous, among which the spruce was most abundant. Handsome groves of old and large cottonwoods were also to be found in some of the valleys. Where the soil became locally sandy and poor, and more particularly in some of the more elevated parts of the high ridges above described, a thick growth of scrub pine and spruce, in which the individual trees were small, was found, and in swamp regions the tamarack was not wanting, and grew generally intermixed with the spruce.

Whatever theory be adopted, and may have been advanced to account for the wide prairies of the western portions of America further to the south,



Saw Mill on the bank of the Peace, about eighteen miles below Peace River.

the origin of the prairies of Peace river was sufficiently obvious, Doctor Dawson thought. There could be no doubt that they had been produced and were maintained by fires, but if there had not been any fires for a few years, young trees sprung up owing to the country being naturally a wooded one. The fires were of course ultimately attributable to human agency, and it was probable that before the country was inhabited by the Indians it was everywhere densely forest-clad. That the date of the origin of the chief prairie tracts now found is remote, was clearly evidenced by their present appearance, and more particularly by the fact that they were everywhere scored and rutted with old buffalo tracks, while every suitable locality was pitted with saucer shaped "buffalo wallows."

In its primitive state the surface was probably covered with dense heavy growth of coniferous trees, principally the spruce (*Picea Engelmanni* and *P. alba*), but with scrub pine (*Pinus contorta*) in some localities, and interspersed with aspen and cottonwood. These forests having been destroyed by fire, a second growth, chiefly of aspen, but with much birch in some places, and almost everywhere a certain proportion of coniferous trees—chiefly spruce—had taken its place. The aspen being a short-lived tree, while the spruce reached a great age and size, the natural course of events, if undisturbed, would lead to the re-establishment of the old spruce forests.

Mr. Charles Mair ("Through the Mackenzie Basin," p. 91), estimates the prairie areas of upper Peace river at about half a million acres, "with much country in addition, which resembles Dauphin district in Manitoba, covered with willows and the like, which, if they can be pulled out by horse power, as is done there, will not be very expensive to clear."

Mr. Mair notes a wide and beautiful table-like prairie, begirt with aspens, at Peace point.

Mr. Fred A. Lawrence explained to the Senate Committee of 1907 that in the valley of Peace river, the bottoms of the river, the islands—and there are large islands in the river—and the points, are largely covered with a heavy growth of spruce, which grows to a large size. The largest he had ever measured was four feet four inches in diameter. A tree of that kind would carry its trunk well up, clear of branches for forty or fifty feet. Of course that is an unusual size, but timber three feet in diameter is common on the hills, and in the lower part of the bottoms. There is no oak, but there are spruce, birch and poplar. The poplars grow to a large size. The cottonwood often grows to four feet, and the poplar to two feet in diameter.



The 23rd Base Line between Townships 88 and 89, Range 14,
West of the 6th Meridian.

ECONOMIC MINERALS.

Indications of Gold.

In his report in 1888, Mr. R. G. McConnell, B.A., of the Geological Survey, states:—"Gold was found in many of the bars in Peace river, and in several places in sufficient quantities to deserve attention. Three miles above the mouth of Battle river, a large bar nearly a mile long on the left bank was examined, from which we obtained fifteen to twenty colours of fine gold, by washing a few handfuls of the mixed gravel and sand in an ordinary frying pan. We tried the bar at several points, and always with the same result. A small stream descends from the plateau on the opposite side of the river, and by leading its waters across the river, which is here about one thousand feet wide, the bar might be easily and inexpensively worked on a large scale. Twelve miles farther up the river, another bar was examined, which yielded from twenty to forty colours when washed in the same way. Numerous other bars occur in this portion of the river, which would probably give as good results as those examined.

"The presence of fine gold in some quantities in the bars above the mouth of Battle river is probably due to the diminution in the strength of the Peace river current which takes place here, and its consequent loss of transporting power. The same fact is shown in the gradual substitution of sand bars for gravel bars which occur at the same point.

"Besides the gold on Peace river, two colours were also washed out of a bar on Wabiskaw river, an eastern tributary of the Peace."

Before the Senate Committee of 1907, evidence, confirmatory of the above, was given to the effect that on the Peace river a little below Battle river, there is very good mining, but the gold is so very fine that for every dollar one saves there, about four and a half go away. There are also certain things that cannot be accounted for. There is trouble with the quick silver, which does not take up the gold. The method adopted was to run the quick silver and then before running it over again, to roll it in acid.

Before the Senate Committee of 1888, Bishop Clut stated that in the Peace river country there was certainly gold in large quantities. On Peace river, twelve or thirteen years prior to 1888, miners made from fifteen dollars to twenty dollars a day washing, but in the winter and when the water was high they could not work, and they abandoned the mines. "If the country were settled," the bishop remarked, "those mines might be worked to better advantage, because the miners could find other occupation in the winter and when the water was high."

Indications of Iron.

According to Mr. R. G. McConnell's 1888 report:—Clay ironstone in nodules and thin beds, is of universal occurrence in the Cretaceous shales of the Peace region, but is especially abundant in some of the outcrops of the Fort St. John shales on Peace river, between Battle river and Smoky river. The ironstone, here, owing to the rapid erosion of the soft shales, has been silted out, and in many places forms thick accumulations at the foot of the cliffs lining the valley, some of which may prove to be of economic value.

Lignite.

“Lignite was found in Peace river sandstone in Peace river in several places, but it seems too small to be workable. It also occurs in the plateaus south of the Lesser Slave lake. In one section at the latter place, four seams, ranging in thickness from one to four feet, besides a number of smaller ones were found, distributed through about a thousand feet of sandstone and shales. Coal fields are said to exist to the west of Hudson Hope and adjoining the Peace River Block.

Deposits of Gypsum.

Mr. McConnell states in his report that “Gypsum occurs on Peace river between Boville rapid and Peace point, where beds ten to fifteen feet in thickness are said to exist. Blocks of gypsum several feet in diameter were found on Peace river above its confluence with Wabiskaw river, and on Mikkwa river a few miles above its mouth. They have probably been derived from the Peace point exposure and carried up the valley of Peace river by ice during the glacial period.”

Evidence to the same effect was given before the Senate Committee of 1907. It was stated that there were large deposits of gypsum on the southern bank of Peace river, near Peace point, which is situated near the confluence of the Peace and Slave rivers.

Natural Gas and Oil.

Corporal Mellor states (Royal Northwest Mounted Police report of 1909) that when patrolling the buffalo country near Peace point he came across “a large natural gas spout burning in a muskeg and was informed it never goes out.”

On an island called Tar island about sixteen miles from Peace River, it is stated that there is evidence of natural gas.

Oil indications are said to be general throughout the region of the Wabiskaw and Mikkwa rivers and also at many places along the Peace river itself.

At the present time there is a complete boring and drilling outfit at Vermilion Chutes. Surface indications at this point have led responsible people to believe that the discovery of oil may not be long delayed.

FISH, GAME AND FUR-BEARING ANIMALS.

Fish.

The rivers and lakes of the Peace river country are, generally speaking, well supplied with many varieties of fish; the whitefish, lake trout, pickerel, tulapi, Back's grayling, pike, bluefish and sucker. The Peace river itself is not nearly so well stocked with fish as some of the smaller rivers and lakes.

Some interesting evidence as to the general fish resources of this district was submitted in writing to the Senate Committee of 1887 by Mr. H. J. Moberley, a chief trader in the Hudson's Bay Company's service. This gentle-



Back's Grayling, average weight six pounds.

man through long residence and frequent travels therein, was quite familiar with this country. According to his statement lake trout are found in almost all the large lakes all over the country and river trout in the Peace river and other streams in the neighborhood of the Rocky mountains. Speckled trout and mountain trout are found in waters on the east and west slope of Rocky mountains; whitefish, all over the country from the Saskatchewan north, in lakes and most rivers; pickerel in most lakes; jackfish or pike in most lakes; suckers, in all waters; gold-eye, in the Peace river and its tributaries.

Game.

With regard to the bison, Mr. W. Ogilvie in 1888 wrote:—"The buffalo which formerly roamed around all the upper waters, is now nearly a thing

of the past. A few still remain scattered over a wide district. Could some means be devised to protect them for some years they would probably soon multiply and become a source of food supply and revenue to the natives. Mr. McDougall (of the Hudson's Bay Company), who has for some years past been gathering information concerning the number of these animals and their locality, has kindly given me the following notes: In the winter of 1887-88, on the head waters of Hay river, which flows into Great Slave lake, and west of Battle river, a tributary of the Peace, the Indians saw three bands containing seventeen, ten, and four, respectively; they killed five, but Mr. McDougall did not ascertain whether or not these were in addition to the above numbers.

Hon. William Christie, ex-member of the Northwest Council, and late Inspecting Factor of the Hudson's Bay Company, examined before the Senate committee of 1888, considered that the wood buffalo was identical with the plains buffalo. Long ago the latter species was found as far north as Peace river in great numbers, and the plains Indians, the Sarcees and others, were then in Peace river country. There is a place called Battle river in Peace river valley, where these plains Indians had a tremendous battle, and it is called Battle river from that circumstance. The plains buffalo were in that country then in thousands, just the same as they were in the plains. As they got hunted by the Indians, they moved out, and the Indians moved out of Peace river country also after this great battle and went into the plains. The battle in question was fought perhaps one hundred years previously. A number of the plains buffalo got into the woods and bred and remained there and were still living in the woods there.

Since the above reports were penned and partly as a result of them, steps have been taken to protect the wood buffalo, and for years back, the few members of the gallant Northwest Mounted Police in Athabaska country have devoted considerable energy to enforcing the law which prohibits the hunting of the buffalo. The most authentic portion of the more recent information we have as to the present extent and condition of the herds of wood buffalo is obtained from the reports of officers and non-commissioned officers of the distinguished force mentioned.

Sergeant R. W. Macleod, Royal Northwest Mounted Police, in the report of his long patrol across country in December, 1910, from Fort Vermilion to the mouth of Hay river states:—"The Indians I met were familiar with the regulations for the protection of the buffalo and protested strongly against a white man being permitted to kill any. The Indians told me the extreme western range of the buffalo is thirty-five or forty miles east of Buffalo lake, and there is certainly no feed for them in any part of the country I passed over."

During the summer of 1911 the special supervision of the wood buffalo was taken out of the hands of the Royal Northwest Mounted Police, and transferred to a government agent who is stationed at Fitzgerald.

Moose exist in large numbers everywhere, the country in the neighbourhood of Fort Vermilion being especially remarkable for this. Reindeer (cariboo) exist in the northern parts of the Peace river country. Red deer, blacktail deer, jumping deer and chevreux are to be found in the Peace river valley; black and brown bears all over the wooded country and Rocky mountains.

The fur-bearing animals such as mink, otter, wolverine, beaver, fox (black, red and cross), lynx, skunk, marten and weasel or ermine are well distributed throughout the country.

Prairie chickens, ruffed grouse and spruce partridges exist everywhere.

In his annual report for 1911, Superintendent G. E. Sanders, D.S.O., commanding "N" Division Royal Northwest Mounted Police, states "The fur catch during the past season has improved; lynx were plentiful in the far north; they have been very scarce for some years and are now reappearing with the rabbits. The value of the fur which passed through Athabaska this year on its way out of the country is estimated at three hundred and fifty thousand dollars. Moose were scarce in some parts where they are generally plentiful and appeared in large numbers at points where they are not usually seen; this is accounted for by the wolves moving them about. Wolves are reported thick in all directions and at Peace River a small pack chased a moose through the settlement. Chicken and partridge are numerous in the southern portion of the district. This year the chief game guardian of the provincial government has notified that the close season for beaver will remain in force. Hitherto it has been the custom to open the season during the winter for a short time.



Trading a Gun for Fur.

"The effort to preserve the beaver by having a close season in this country fails entirely, and I would repeat what I said last year in regard to this subject about which I made careful inquiries. 'I am strongly of opinion there should be an open season for beaver. I found during my travels that Indians kill more beaver when there is no open season than when there is. When they do not kill for the fur, and there is no reason in their minds to preserve the animals, they exterminate whole families for food, whereas if they have an open season, and the fur is thereby more valuable, they are careful not to destroy certain colonies, but leave some to breed. They kill only when the fur is prime. The majority of the hunters and trappers whom I consulted agreed that between October 15 and December 15 would be the most suitable time for an open season.'"

Corporal S. G. Clay, Royal Northwest Mounted Police, made a patrol through Grande Prairie country in August, 1911, and in his report states:—"Indians in this locality are in fairly good shape, moose and bear being plentiful, and consequently there has been practically no destitution amongst the Indians."



